

WHAT IS CLAIMED IS:

SUB A5

1. An apparatus for controlling recording and reproduction in a video cassette tape recorder comprising:

5 frame extracting means for buffering and amplifying compressed digital data input, and extracting specific data for a speed-varied reproduction from said compressed digital data;

10 frame recording position controlling means for calculating the number of tracks for the compressed digital data, selectively outputting a buffered and amplified output and said extracted specific data from said frame extracting means, and outputting a multiplexing timing signal;

15 frame position information recording means for recording position information of tracks for a speed-varied reproduction and index information on a magnetic tape, based on said multiplexing timing signal;

20 digital recording means for recording said digital signals including said index information on said magnetic tape;

digital reproduction means for reproducing the digital signals recorded on the magnetic tape;

25 frame position information detecting means for detecting position information of specific tracks for the speed-varied reproduction and index information;

tape speed controlling means for controlling the speed of a capstan motor, based on said detected index information and position information of the specific tracks; and

5 frame removing means for receiving therein said output from the digital reproduction means and removing unnecessary bit streams from the specific data.

2. An apparatus in accordance with claim 1, wherein said frame extracting means comprises:

10 a buffer adapted to buffer an output of said interface and thereby amplify it for a predetermined period;

a frame detector adapted to detect said specific data from said output of the interface and output a write enable signal; and

15 a frame memory adapted to select and store the specific data, based on said write enable signal.

3. An apparatus in accordance with claim 2, wherein said frame detector is adapted to count the number of frames when a frame mark code is detected from a bit stream of said output of the interface, and to enable said write enable signal when said counted number of frames is determined to be the same as the number of specific frames repeated.

25 4. An apparatus in accordance with claim 1, wherein said

frame recording position controlling means comprises:

a track number calculator adapted to operate an average bit rate of said compressed digital signals and size of the specific data, thereby calculating the number of tracks for the specific data and the number of tracks present between specific tracks;

a multiplexing timing generator adapted to receive an output from said track number calculator and output a switching signal for positioning the specific data on said specific tracks in accordance with a head switching signal;

a multiplexer adapted to select an output from said frame extracting means, based on an output from said multiplexing timing generator and sending it to said digital recording means; and

a bit stuffing circuit adapted to fill insufficient data with bit streams or dummy bits when said output of the frame extracting means is at an underflow state.

5. An apparatus in accordance with claim 1, wherein said frame position information recording means comprises:

a frame position recorder adapted to receive said output from said multiplexing timing generator and thereby output position discrimination information to said digital recording means so as to record position information of a next specific track on the initial synchronous block of the track recorded

with said specific data; and

an index signal recorder adapted to receive said position discrimination information and thereby record position information of said track recorded with the specific data on said control track of said magnetic tape by an index head.

6. An apparatus in accordance with claim 1, wherein said frame position information detecting means comprises:

an index signal detector adapted to detect index information recorded on said control track of said magnetic tape and indicative of whether tracks of specific data are present, by use of an index head;

a recording position-synchronized block detector adapted to detect said output from said digital reproduction means and thereby detect recording position-synchronized blocks recorded with codes indicative of relative position information of said tracks recorded with said specific data; and

a recording position decoder adapted to decode an output of said recording position-synchronized block detector, based on a speed multiple, and thereby output a signal for calculation of a capstan servo speed.

7. An apparatus in accordance with claim 1, wherein said tape speed controlling means comprises:

a capstan servo speed calculator adapted to calculate a

capstan servo speed for repeating a normal speed travel and a high speed travel on specific tracks in a speed-varied reproduction of specific track position information and track position information for specific data from said frame position information detecting means based on a speed multiple; and

a capstan servo drive signal generator adapted to control driving of said capstan motor, based on an output of said capstan servo speed calculator.

8. An apparatus in accordance with claim 1, wherein said frame removing means comprises:

a deformatter adapted to convert said output of said digital reproduction means to a signal form prior to recording;

a stuffing bit-detecting and removing circuit adapted to output a bit removing signal to said deformatter and thereby remove stuffing bits or dummy bits added for preventing generation of an underflow of said frame extracting means in the speed-varied reproduction; and

a frame removal timing generator adapted to receive said specific track position information from said frame position information detecting means and output a frame removing signal to the deformatter, based on a head switching signal, thereby preventing outputting of said specific data for the varied

speed in a normal-speed reproduction.

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